

Program Notice

FGIS PN-05-06

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NIRT BARLEY PROTEIN PROGRAM

1. PURPOSE

The Grain Inspection Packers and Stockyards Administration (GIPSA) is extending applications for the Near-infrared Transmittance (NIRT) technology currently approved for use in official inspection to include the determination of barley protein.

2. BACKGROUND

For several years GIPSA has evaluated the potential of using NIRT to predict barley protein, most recently using an artificial neural network (ANN) barley protein calibration developed by a group of international collaborators. In 2002, GIPSA conducted a pilot test to evaluate the accuracy of the ANN calibration for barley protein. The pilot study included market samples from major production/handling locations to compare barley protein results obtained using the ANN calibrations to the standard reference method of testing, Combustion Nitrogen Analyzer (CNA). Based on the results, it was determined that implementing the ANN calibration would be beneficial to GIPSA and the barley industry.

In November 2004, GIPSA issued a Federal Register notice, FR 04-24647, announcing an intent to implement barley protein measurement as official criteria under the United States Grain Standards Act (USGSA) effective July 1, 2005. The Federal Register notice and results of the 2002 pilot study are available on the GIPSA website at <http://www.usda.gov/gipsa>.

3. REQUIREMENTS

The official barley protein calibration uses the same artificial neural network (ANN) technology as that recently adopted for wheat protein. Barley protein calibrations are distributed on the same diskette, Foss part number 10014260, as the ANN wheat protein calibrations. The barley calibration uses the protein prediction model BAPR0025. NIRT instrument and software requirements to use the ANN barley protein calibration are the same as those for the ANN wheat protein calibrations.

Standard Reference Samples (SRS), SRS baseline values, and bias worksheets can be obtained from GIPSA, Technical Services Division after June 1, 2005.

Program monitoring will be in accordance with the NIRT Program Handbook, Chapter 5. The Handbook will be updated to address barley program items effective July 1, 2005.

4. SAMPLE TESTING AND CERTIFICATION OF RESULTS

- a. NIRT barley protein testing is determined on a representative sample portion of approximately 500 grams (1225, 1226, 1227, 1229), 600 grams (1241), up to the work portion size of barley after the removal of dockage using a standard dockage tester. Samples are analyzed on approved NIRT instruments equipped with an 18 millimeter cell.
- b. Official sample - lot and submitted samples of barley are tested and certified for protein in conjunction with official grade determinations or as a separate testing service.
- c. Barley protein results are determined on a dry matter basis and are reported on the work record and certificate to the nearest tenth percent. Upon request, an applicant can request an alternate moisture basis (e.g., "as is") be used in lieu of the standard dry matter basis.

5. FEES FOR SERVICE

- a. For barley protein testing service provided online at an applicant's facility the fee will be \$2.25, code G286, same as wheat protein. See Table 1, Directive 9180.74
- b. For testing performed at other than an applicant's facility in an FGIS lab the fee will be \$10.00, code G287, same as wheat protein. See Table 2, Directive 9180.74

6. SUMMARY

Upon the request of an applicant, official inspection personnel will determine protein content in barley under the authority of the United States Grain Standards Act (USGSA) as official criteria. Results will be provided on a dry matter basis, and may also be provided on an alternate moisture basis if requested by the applicant.

7. FILING INSTRUCTIONS

File a copy of this program notice with the NIRT Handbook. The Handbook will be revised effective July 1, 2005 to incorporate these changes.

8. QUESTIONS

Direct any questions concerning the ANN barley protein calibration implementation procedures to Mark Leppert, Inspection Systems Engineering Branch, TSD, (816) 891-0433; or email at mark.leppert@usda.gov

/s/ David Orr

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